

President's Council of Advisors on Science and Technology (PCAST)

TWENTIETH MEETING

July 19, 2012

MINUTES
Washington DC

Members Present: John P. Holdren (Co-Chair), Eric Lander (Co-Chair), William Press (Vice Chair), Maxine Savitz (Vice Chair), Rosina Bierbaum, Christine Cassel, S. James Gates Jr., Mark Gorenberg, Mario Molina, Ernest J. Moniz, Barbara Schaal, Daniel Schrag, Chris Chyba, Ed Penhoet, David E. Shaw, Shirley Ann Jackson,

Members Absent: Eric Schmidt, Richard C. Levin, Craig Mundie, Ahmed Zewail, Chad Mirkin

Staff: Amber Hartman Scholz, Deborah Stine

Public Attendance: Approximately 75 observers attended.

Video Webcast Archive: The archive of the video webcast is available at www.whitehouse.gov/ostp/pcast.

The President's Council of Advisors on Science and Technology (PCAST) convened in open session at approximately 9:00 am with co-chairs Dr. John Holdren and Dr. Eric Lander presiding on Thursday, July 19, 2012.

Agenda Item 1: Welcome from PCAST Co-Chairs

Dr. Holdren welcomed PCAST members, Office of Science & Technology Policy staff, members of the public in attendance, and those viewing online. Dr. Holdren emphasized that it is a busy time around science and technology policy issues, and mentioned the PCAST reports on the agenda to be discussed during the meeting. Dr. Lander offered his thanks to PCAST which has been extremely busy and productive during the summer.

Agenda Item 2: PCAST Study Updates

Dr. Holdren introduced PCAST vice-chair Dr. William Press to provide an update on the Future of the U.S. Science and Technology Research Enterprise study. Dr. Press provided a background to the report, noting that historically and culturally, Americans are both fundamental discoverers and practical inventors. He then said that the report's recommendations fit into five broader Key Opportunities, which relate to the research and development investment by the Federal Government, and the roles of industry and research universities. Dr. Press then summarized the

report recommendations stemming from each Key Opportunity and noted that other advisory groups' reports had made similar recommendations.

PCAST members asked about R&D tax credits and employment opportunities for graduate students and young scientists. After general discussion of the report, a motion was made and seconded to approve the report pending editorial revisions. PCAST approved the report by a unanimous vote.

Dr. Holdren then introduced PCAST members Dr. Barbara Schaal and Dr. Daniel Schrag to provide an update on the study Agricultural Preparedness and U.S. Agricultural Research.

Dr. Schrag provided an overview of the major emerging challenges to agriculture including the current drought that is heavily impacting the Midwestern states. Dr. Schaal then illustrated funding sources and types of agricultural research, and the types of crops most funded by the public sector. Dr. Schrag and Dr. Schaal then summarized the report's main findings and recommendations covering research, workforce, infrastructure, public-private partnerships, commercialization and tech transfer, and implementation.

After the presentation, PCAST members asked about public-private partnerships, environmental issues, STEM (science, technology, engineering, and mathematics) education, investment and commercialization, and surveillance and assessment methods. Following general discussion of the report, a motion was made and seconded to approve the report pending editorial revisions. PCAST then approved the report by a unanimous vote.

Agenda Item 3: An Assessment and Outlook for Nuclear Physics

Dr. Holdren then introduced Dr. Stuart Freedman, professor of experimental atomic nuclear and particle physics, and chair in experimental physics at the University of California, Berkeley.

Dr. Freedman provided an overview of the fourth and recently released Decadal Review of Nuclear Physics by the National Academies. After summarizing the process and purpose of the report, he discussed the different national accelerator facilities in the United States. He then outlined the categories of fields of study within nuclear physics, as well as the major accomplishments in nuclear physics during the past decade, accompanied by some of the data and results from those studies. Dr. Freedman ended by presenting the report's recommendations for the coming decade, including ones regarding the portfolio of nuclear science projects, and the improvement and construction of national nuclear physics facilities.

PCAST members inquired about the trajectory of the budget, the operations and maintenance of nuclear physics facilities, the long range plan, international collaboration, the tension between funding facilities and researchers, and applications of nuclear physics.

Agenda Item 4: The White House Neuroscience Initiative and Advances in Neuroscience

Dr. Holdren introduced Dr. Philip Rubin, the first of three speakers, the principal assistant director for science at the Office of Science and Technology Policy. He also introduced Dr. William Mobley, professor and chair of the Department of Neuroscience at University of California, San Diego, and Dr. R. Jacob Vogelstein, program manager for applied neuroscience in the Johns Hopkins University Applied Physics Lab.

Dr. Rubin provided a brief overview of the new White House Neuroscience Initiative, announcing the National Science and Technology Council's Interagency Working Group on Neuroscience. He indicated the Working Group will coordinate activities in neuroscience research across the Federal Government. Dr. Rubin then provided an overview of the key neuroscience research areas within the Initiative.

Dr. Vogelstein spoke about research and clinical testing at Johns Hopkins University in the field of neuroprosthetics. He described the challenges of creating a prosthetic hand, including problems of feedback and control. Dr. Vogelstein then provided examples of how neuroscience-based technologies can create more fully integrated prostheses.

Dr. Mobley then made a presentation about the state of neuroscience. He summarized the past twenty years of research advances, provided an overview of the general body of knowledge in the neuroscience community, and described the future of neuroscience research.

PCAST members asked the panel questions about data collection, data sharing, and creating a dialogue with the public. Each panelist then provided short closing remarks.

Agenda Item 5: Public Comment

One member of the public provided comments to PCAST in person. The following individuals provided oral comment:

Link Hoewing, Assistant Vice President, Internet and Technology Policy, Verizon

Dr. Holdren adjourned the meeting at approximately 12:30 pm.

Respectfully Submitted:



Deborah D. Stine
Executive Director
President's Council of Advisors on Science and Technology

Approved:



John P. Holdren
Co-Chair
President's Council of Advisors on Science and Technology



Eric Lander
Co-Chair
President's Council of Advisors on Science and Technology